AMENDMENTS TO THE CLAIMS

Please **AMEND** claims 1-4, 12-17, 23-28, 31-34, 37, 38, 44, 45 and 49-52 as shown below.

Please **ADD** claims 53-60 as shown below.

The following is a complete list of all claims in this application.

1. (Currently Amended) A network switching device comprising:

an ingress module configured to receive frames of data from a first channel and store the frames of data in one or more buffers, wherein each frame of data has one of a plurality of classes of service;

one or more queues;

a forwarding module configured to enqueue each of the one or more buffers by sending a pointer for each of the one or more buffers to the one or more queues after the ingress module stores the [[data]] frames of data in one or more of the one or more buffers; and

a plurality of counters comprising one counter for each of the classes of service, wherein each of the counters is configured to

store a count for the first channel for a respective one of the classes of service,

increment the count when the forwarding module enqueues one of the buffers storing ~~the data of~~ one of the frames of data having the respective class of service, and

decrement the count after the frame of data stored in a buffer for a frame received from the first channel and having the respective class of service is transmitted from the network switching device; and

an egress module configured to retrieve the frames of data from the one or more buffers and transmit the retrieved frames of data to a second channel,

wherein the egress module exercises ~~exercise~~ flow control on the first channel for each of the classes of service when the count for the class of service exceeds a predetermined threshold for the class of service.

2. (Currently Amended) The network switching device of claim 1:

wherein, to exercise flow control for one of the classes of service, the egress module is further configured to send a pause frame to the first channel, and wherein the pause frame indicates the one of the classes of service to be paused.

3. (Currently Amended) The network switching device of claim 1:

wherein the egress module is further configured to terminate flow control on the first channel for each of the classes of service when the count for the class of service falls below a further predetermined threshold for the class of service.

4. (Currently Amended) The network switching device of claim 3:

wherein, to terminate flow control for one of the classes of service, the egress module is further configured to send a pause release frame to the first channel, and

wherein the pause release frame indicates the one of the classes of service to be released.

5-6. (Cancelled)

7. (Original) An integrated circuit comprising the network switching device of claim 1.

8. (Original) A network switch comprising the network switching device of claim 1.

9. (Original) An output-queued network switch comprising the network switching device of claim 1.

10. (Original) The network switching device of claim 1, further comprising:

a memory comprising the buffers.

11. (Original) An integrated circuit comprising the network switching device of claim 10.

12. (Currently Amended) The network switching device of claim 1, further comprising [[:]] a reserve module configured to reserve one or more buffers to the first channel [[;]].

wherein a pause threshold for the first channel is a function of at least one of the group consisting of:

the number of the buffers reserved to the first channel; and

the number of buffers neither reserved nor enqueued.

13. (Currently Amended) The network switching device of claim 3, further comprising [[:]] a reserve module configured to reserve one or more buffers to the first channel [[;]],

wherein a pause release threshold for the first channel is a function of at least one of the group consisting of:

the number of the buffers reserved to the first channel; and

the number of buffers neither reserved nor enqueued.

14. (Currently Amended) A network switching device comprising:

ingress module means for receiving frames of data from a first channel, wherein each frame of data has one of a plurality of classes of service, and ~~to store~~ storing the data in one or more buffers;

one or more queue means for queuing the one or more buffers;

forwarding module means for enqueuing each of the one or more buffers by sending a pointer for each of the one or more buffers to one or more of the one or more queue means after the ingress module means stores ~~the data of~~ one of the frames of data in the one or more buffers;

a plurality of counter means comprising one counter means for each of the classes of service, each of the counter means for:

storing a count for the first channel for a respective one of the classes of service,

incrementing the count when the forwarding module enqueues one of the buffers storing ~~the data from~~ one of the frames of data having the respective class of service, and

decrementing the count after the frame of data stored in a buffer, ~~for a frame~~ received from the first channel and having the respective class of service is transmitted from the network switching device; and

egress module means for retrieving the frames of data from the one or more buffers, outputting the frames of data to a second channel and exercising flow control on the first channel for each of the classes of service when the count for the class of service exceeds a predetermined threshold for the class of service.

15. (Currently Amended) The network switching device of claim 14:

wherein, to exercise flow control for one of the classes of service, the egress module means sends a pause frame to the first channel; and

wherein the pause frame indicates the one of the classes of service to be paused.

16. (Currently Amended) The network switching device of claim 14:

wherein the egress module means terminates flow control on the first channel for each of the classes of service when the count for the class of service falls below a further predetermined threshold for the class of service.

17. (Currently Amended) The network switching device of claim 16:

wherein, to terminate flow control for one of the classes of service, the egress module means sends a pause release frame to the first channel, and wherein the pause release frame indicates the one of the classes of service to be released.

18-19. (Cancelled)

20. (Original) An integrated circuit comprising the network switching device of claim 14.

21. (Original) A network switch comprising the network switching device of claim 14.

22. (Original) An output-queued network switch comprising the network switching device of claim 14.

23. (Currently Amended) The network switching device of claim 14, further comprising [[:]] reserve module means for reserving one or more buffers to the first channel [[;]].

wherein a pause threshold for the first channel is a function of at least one of the group consisting of:

the number of the buffers reserved to the first channel; and

the number of buffers neither reserved nor enqueued.

24. (Currently Amended) The network switching device of claim 16, further comprising [[:]] reserve module means for reserving one or more buffers to the first channel [[;]].

wherein a pause release threshold for the first channel is a function of at least one of the group consisting of:

the number of the buffers reserved to the first channel; and

the number of buffers neither reserved nor enqueued.

25. (Currently Amended) A method comprising:

receiving frames of data from a first channel via an ingress module, wherein each frame of data has one of a plurality of classes of service;

storing the frames of data in one or more buffers;

enqueueing each of the one or more buffers by sending a pointer for each of the one or more buffers to one or more output queues after storing ~~the data of~~ one of the frames of data in the buffer;

storing a count for the first channel for each of the classes of service;

incrementing the count for one of the classes of service enqueueing one of the buffers storing ~~the data from~~ one of the frames of data received from the first channel and having the one of the classes of service;

decrementing the count for one of the classes of service after the frame of data stored in a buffer, ~~for a frame~~ received from the first channel and having the one of the classes of service is transmitted; [[and]]

exercising flow control on the first channel for each of the classes of service using an egress module when the count for one of the classes of service exceeds a predetermined threshold for the class of service;

retrieving the frames of data from the one or more buffers; and

transmitting the retrieved frames of data to a second channel via the egress module.

26. (Currently Amended) The method of claim 25, wherein exercising flow control for one of the classes of service comprises:

sending a pause frame to the first channel, wherein the pause frame indicates the one of the classes of service to be paused.

27. (Currently Amended) The method of claim 25, further comprising:

terminating flow control on the first channel for each of the classes of service when the count for the one of the classes falls below a further predetermined threshold for the class of service.

28. (Currently Amended) The method of claim 27, wherein terminating flow control for one of the classes of service comprises:

sending a pause release frame to the first channel, and wherein the pause release frame indicates the one of the classes of service to be released.

29-30. (Cancelled)

31. (Currently Amended) A computer readable medium having a stored computer program embodying instructions executable by a computer, which, when executed by the computer, cause the computer to control an apparatus having an ingress module connected to a first channel and an egress module connected to [[the]] a second channel, the instructions comprising:

instructions for receiving frames of data from the first channel via the ingress module, wherein each frame of data has one of a plurality of classes of service;

instructions for storing the frames of data in one or more buffers ~~for frames of the data received by the ingress module from the channel, wherein each frame has one of a plurality of classes of service~~;

instructions for enqueueing each of the one or more buffers by sending a pointer for each of the one or more buffers to one or more output queues after storing the data for one of the frames in the buffer;

instructions for storing a count for the first channel for each of the classes of service;

instructions for incrementing the count for one of the classes of service when enqueueing one of the buffers storing the data for one of the frames received from the first channel and having one of the classes of service, and

instructions for decrementing the count for one of the classes of service after the data stored in a buffer for a frame received from the first channel and having the one of the classes of service is transmitted; [[and]]

instructions for causing the egress module to exercise flow control on the first channel for each of the classes of service when the count for ~~one of~~ the ~~classes~~ class of service exceeds a predetermined threshold for the class of service;

instructions for retrieving the frames of data from the one or more buffers; and

instructions for transmitting the retrieved frames of data via the egress module to the second channel.

32. (Currently Amended) The computer readable medium of claim 31, wherein the instructions for causing the egress module to exercise flow control for one of the classes of service comprises:

instructions for causing the egress module to send a pause frame to the first channel, wherein the pause frame indicates the one of the classes of service to be paused.

33. (Currently Amended) The computer readable medium of claim 31, the instructions further comprising:

instructions for causing the egress module to terminate flow control on the first channel for each of the classes of service when the count for each class of service falls below a further predetermined threshold for the class of service.

34. (Currently Amended) The computer readable medium of claim 33, wherein the instructions for causing the egress module to terminate flow control for one of the classes of service comprises:

instructions for causing the egress module to send a pause release frame to the first channel, wherein the pause release frame indicates the one of the classes of service to be released.

35-36. (Cancelled)

37. (Currently Amended) A network switching device comprising:

a plurality of counters for a plurality of classes of service, respectively, each counter configured to:

store a count for a respective one of the classes of service;

increment the count when one of buffers storing one or more frames of data having the respective class of service is enqueued by sending a pointer for each of the one or more buffers to one or more output queues; and

decrement the count after the one or more frames of data stored in the one or more buffers is transmitted from the network switching device;

an egress module configured to retrieve the one or more frames of data from the buffers and output the retrieved one or more frames to a destination channel, the egress module further configured to generate a pause frame indicating one or more of the classes of service to be paused when one or more counts for the one or more classes of service exceed a predetermined threshold for the one or more classes of service; and

an ingress module configured to receive the one or more frames from a source channel, store the one or more frames to the buffers and receive [[a]] the pause frame [[;]] from the egress module,

wherein, in response to the received pause frame, the [[egress]] ingress module ~~is further configured to cease to transmit~~ requests the source channel to pause sending the frames of data having the one or more classes of service to be paused.

38. (Currently Amended) The network switching device of claim 37 [[:]],

wherein the egress module is further configured to generate a pause release frame indicating one or more of the classes of service to be released when one or more counts for the respective classes of service fall below the predetermined threshold for the respective classes of service;

wherein the ingress module is further configured to receive [[a]] the pause release frame from the egress module;

wherein, in response to the received pause release frame, the [[egress]] ingress module ~~is further configured to resume transmitting~~ requests the source channel to resume sending the frames of data having the one or more classes of service to be released.

39. (Original) An integrated circuit comprising the network switching device of claim 37.

40. (Original) A network switch comprising the network switching device of claim 37.

41. (Original) An output-queued network switch comprising the network switch of claim 37.

42. (Previously Presented) The network switching device of claim 37, further comprising a memory including the buffers.

43. (Original) An integrated circuit comprising the network switching device of claim 42.

44. (Previously Presented) A network switching device comprising:

means for receiving one or more frames of data from a source channel;

means for storing a plurality of counts for a plurality of classes of service, respectively [[,]];

means for incrementing each count upon enqueuing one or more buffers storing the one or more frames of data by sending a pointer for each of the one or more buffers

to one or more output queues, each of the frames of data having one of the classes of service[[,]]; and

means for decrementing each count after the one or more frames of data stored in the one or more buffers are transmitted from the network switching device; and

means for outputting the one ore more frames of data stored in the one or more buffers to a destination channel,

wherein the means for outputting ~~means for generating~~ generates a pause frame indicating one or more classes of services to be paused when the one or more counts for the respective classes of service exceed a predetermined threshold for the respective classes of service[[;]], and ~~means for ceasing to transmit~~ the means for receiving requests the source channel to pause sending frames of data having one or more of the classes of service to be paused upon receiving [[a]] the pause frame from the means for outputting.

45. (Currently Amended) The network switching device of claim 44, ~~further comprising: means for generating~~ wherein the means for outputting generates a pause release frame indicating one or more of the classes of service to be released when one or more counts for the respective classes of service fall below the predetermined threshold for the respective classes of service[[;]], and

~~means for~~ the means for receiving requests the source channel resume ~~resuming~~ transmitting the frames of data having the one or more of the classes of service to be released.

46. (Original) An integrated circuit comprising the network switching device of claim 44.

47. (Original) A network switch comprising the network switching device of claim 44.

48. (Original) An output-queued network switch comprising the network switch of claim 44.

49. (Currently Amended) A method comprising:

receiving one or more frames of data from a source channel via an ingress module;

storing a plurality of counts for a plurality of classes of service, respectively;

incrementing each count upon enqueuing one or more buffers storing the one or more frames of data by sending a pointer for each of the one or more buffers to one or more output queues, each frame of data having one of the classes of service;

decrementing each count after the one or more frames of data stored in the one or more buffers and having the one of the classes of service are transmitted from the network switching device;

causing an egress module to generate ~~generating~~ a pause frame indicating that one or more of the classes of service to be paused when one or more counts for the respective classes of service exceed a predetermined threshold for the respective classes of service; [[and]]

sending the pause frame to the ingress module;

~~ceasing~~ causing the ingress module to request the source channel to cease to transmit the frames of data having the one or more classes of service to be paused;

retrieving the one or more frames of data stored in the one or more buffers; and

outputting the retrieved one or more frames to a destination channel via the egress module.

50. (Currently Amended) The method of claim 49, further comprising:

causing the egress module to generate ~~generating~~ a pause release frame indicating one or more of the classes of service to be released when one or more counts for the respective classes of service fall below a predetermined threshold for the respective classes of service; and

causing the ingress module to request the source channel to resume ~~resuming~~ transmitting the frames of data having the one or more classes of service to be released.

51. (Currently Amended) A computer readable medium having a stored computer program embodying instructions, which, when executed by a computer, cause the computer to control an apparatus having an ingress module connected to a source channel and an egress module connected to [[the]] a destination channel, the instructions comprising:

instructions for receiving one or more frames of data from a source channel via an ingress module;

instructions for storing a plurality of counts for a source channel for a plurality of classes of service, respectively;

instructions for incrementing each count upon enqueuing one or more buffers storing the one or more frames of data having the respective class of service by sending a pointer for each of the one or more buffers to one or more output queues;

instructions for decrementing each count after the one or more frames of data stored in the one or more buffers and having the respective class of service is transmitted from the network switching device;

instructions for causing the egress module to generate ~~generating~~ a pause frame indicating that one or more classes of services to be paused when one or more counts for the respective classes of service exceed a predetermined threshold for the respective classes of service; and

instructions for causing the ingress module to request the source channel to pause transmitting ~~ceasing to transmit~~ the frames of data having the one or more classes of service to be paused.

52. (Currently Amended) The computer readable medium of claim 51, the instructions further comprising:

instructions for causing the egress module to generate ~~generating~~ a pause release frame indicating that one or more of the classes of service to be released when one or more counts for the respective classes of service fall below the predetermined threshold for the respective classes of service; and

instructions for causing the ingress module to request the source channel to ~~resuming~~ resume transmitting the frames of data having the one or more classes of service to be released.

53. (New) The network switching device of claim 1, wherein the predetermined threshold is a dynamic pause threshold.

54. (New) The network switching device of claim 14, wherein the predetermined threshold is a dynamic pause threshold.

55. (New) The method of claim 25, wherein the predetermined threshold is a dynamic pause threshold.

56. (New) The computer readable medium of claim 31, wherein the predetermined threshold is a dynamic pause threshold.

57. (New) The network switching device of claim 37, wherein the predetermined threshold is a dynamic pause threshold.

58. (New) The network switching device of claim 44, wherein the predetermined threshold is a dynamic pause threshold.

59. (New) The method of claim 49, wherein the predetermined threshold is a dynamic pause threshold.

60. (New) A computer readable medium of claim 51, wherein the predetermined threshold is a dynamic pause threshold.